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EXAMINER	
LU, KUEN S	

ART UNIT	PAPER NUMBER
2167	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/21/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/004,988	CULP ET AL.	
	Examiner	Art Unit	
	Kuen S. Lu	2167	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10/13/2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9,12-23,26-31 and 34-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9,12-23,26-31 and 34-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This Action is responsive to Applicant's Amendment filed October 13, 2006. As to Applicant's Arguments or Remarks Made in an Amendment, concerning the element of **"**the control engine further operable to modify a variable rate of energy consumption data collection at the facility in response to a predetermined event**",** Examiner introduces a new reference for providing the teaching in the Office Action for non-Final Rejection, shown next. Please note claims 1-9, 12-23, 26-31 and 34-45 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2.1. Claims 1-9, 12-23, 26-31 and 34-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amaratunga et al. (U.S. Publication 2003/0061091, hereafter "Amaratunga") and in view of Ehlers et al. (U.S. Patent 6,216,956, hereafter "Ehlers") and Urbano et al. (U.S. Patent 6,216,956, hereafter "Urbano").

As per Claims 1 and 15, Amaratunga teaches "**remote monitoring and controlling of energy consumption of a facility, comprising: a processor**" (See Fig. 1, element 20 and Page 4, [0030], lines 16-20 where the processing module of the energy consumption prediction system comprises a

processor is equivalent to Applicant's **remote monitoring and controlling of energy consumption of a facility, comprising: a processor)**;

"**a database coupled to the processor, the database operable to receive and store energy consumption data associated with the facility**" (See Page 7, [0048], lines 1-4 where a historical database is the to collect and store data from meters, devices and sensors at the energy consumption systems or consumption site is equivalent to Applicant's **a database coupled to the processor, the database operable to receive and store energy consumption data associated with the facility)**;

"**an analysis engine executable by the processor, the analysis engine operable to evaluate the energy consumption data**" (See Page 4, [0029], lines 1-4 where a TEUP (Total Energy Use Profile) is developed for analyzing and evaluating the energy amounts and providing other energy use information is equivalent to Applicant's **an analysis engine executable by the processor, the analysis engine operable to evaluate the energy consumption data)**, and "**determine whether energy consumption operating parameters require modification to increase efficiency**" (See Page 5, [0037], lines 13-20 where amount of energy to produce pollution is utilized to predict if energy consumption system is operating efficiently and at Page 7, [0047], lines 24-28 where a feedback control capability is built for attempting to bring the energy consumption system to a more efficient operating state is equivalent to Applicant's **determine whether energy consumption operating parameters require modification to increase efficiency);**

"**a control engine operable to initiate operating parameter modification of an energy consumption system of the facility in response to a desired operating parameter modification**" (See Page 7, [0047], lines 24-28 where a feedback control capability is built for attempting to bring the energy consumption system to a more efficient operating state is equivalent to Applicant's **a control engine operable to initiate operating parameter modification of an energy consumption system of the facility in response to a desired operating parameter modification)**.

Amaratunga does not explicitly teach control or other engines "**residing in the memory and executable by the processor**" or "**a memory unit coupled to the processor**".

However, Ehlers teaches a control engine "**residing in the memory and executable by the processor**" and "**a memory unit coupled to the processor**" (See Fig. 1, elements 20-30 and col. 7, lines 1-3 and 16-17 where a memory unit coupled to the processor, an energy management system includes processor and memory next to each other, and data stored in the memory is accessed and processed by the processor is equivalent to Applicant's control engine **residing in the memory and executable by the processor** and "**a memory unit coupled to the processor)**.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to combine Ehlers' reference into Amaratunga's by implementing the functions which require processing on the part of the processor, such as environmental condition control, price and energy consumption control, on the memory unit such that they can be processed without invoking disk i/o and memory

loading/swapping because by doing so the processing system would have performed more efficiently.

The combined teaching of Ehlers and Amaratunga references does not explicitly teach "**the control engine further operable to modify a variable rate of energy consumption data collection at the facility in response to a predetermined event**".

However, Urbano teaches "**the control engine further operable to modify a variable rate of energy consumption data collection at the facility in response to a predetermined event**" (See Abstract, Fig. 13 and col. 1, lines 36-62 where data collection rate of an image acquisition device is adjusted in inverse proportion to the most recent frame correlation coefficient and the device process is triggered by the data collected to locate a predetermined event and the teaching shows the device responds to predetermined event and adjust data collection to a predetermined setting, the correlation coefficient).

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to combine the teaching of Urbano with Ehlers and Amaratunga references by implementing variable data collection rate to Ehlers and Amaratunga's systems because adjusting data collection rate would have enhanced the object every reference pursuits: **saving cost**.

The Amaratunga reference further teaches the following:

"**the analysis engine further operable to analyze the predetermined event based on a first subset of the energy consumption data obtained before the predetermined event and a second subset of the energy consumption data**

obtained after the predetermined event" (See Page 7, [0048] where data is collected and stored to build a historic database, the current set of data, and a new regression is performed on the latest set of data in which data is collected periodically or when a significant change of energy-consumption system is equivalent to Applicant's **the analysis engine further operable to analyze the predetermined event based on a first subset of the energy consumption data obtained before the predetermined event and a second subset of the energy consumption data obtained after the predetermined event**).

As per claim 28, Amaratunga teaches the following:

"**A system for remote monitoring and controlling energy consumption of a facility, comprising: processor**" (See Fig. 1, element 20 and Page 4, [0030], lines 16-20 where the processing module of the energy consumption prediction system comprises processor is equivalent to Applicant's **A system for remote monitoring and controlling energy consumption of a facility, comprising: processor**);

"**a database coupled to the processor, the database operable to receive and store energy consumption data associated with the facility**" (See Page 7, [0048], lines 1-4 where a historical database is the to collect and store data from meters, devices and sensors at the energy consumption systems or consumption site is equivalent to Applicant's **a database coupled to the processor, the database operable to receive and store energy consumption data associated with the facility**);

"**an analysis engine executable by the processor, the analysis engine operable to evaluate the energy consumption data**" (See Page 4, [0029], lines 1-4 where a TEUP (Total Energy Use Profile) is developed for analyzing and evaluating the energy amounts and providing other energy use information is equivalent to Applicant's **an analysis engine executable by the processor, the analysis engine operable to evaluate the energy consumption data)**, and "**determine energy consumption efficiency of the system, the analysis engine further operable to determine whether an operating parameter modification to the system would result in an energy consumption efficiency increase**" (See Page 5, [0037], lines 13-20 where amount of energy to produce pollution is utilized to predict if energy consumption system is operating efficiently and at Page 7, [0047], lines 24-28 where a feedback control capability is built for attempting to bring the energy consumption system to a more efficient operating state is equivalent to Applicant's **determine energy consumption efficiency of the system, the analysis engine further operable to determine whether an operating parameter modification to the system would result in an energy consumption efficiency increase)**.

Amaratunga does not specifically teach the analysis engine "**residing in the memory and executable by the processor" or "a memory unit coupled to the processor**".

However, Ehlers teaches the analysis engine "**residing in the memory and executable by the processor"** and **"a memory unit coupled to the processor**" (See Fig. 1, elements 20-30 and col. 7, lines 1-3 and 16-17 where a memory unit coupled to the processor and an energy management system includes processor and memory next

to each other, and data stored in the memory is accessed and processed by the processor is equivalent to Applicant's **residing in the memory and executable by the processor** and **a memory unit coupled to the processor)**.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to combine Ehlers' reference into Amaratunga's by implementing multiple data collection and storage functions for providing short and long term data storage separately, and where the functions require processing on the part of the processor, such as environmental condition control, price and energy consumption control, on the memory unit such that they can be processed without invoking disk i/o and memory loading/swapping because by doing so the processing system would have performed more efficiently.

The combined teaching of the Amaratunga and Ehlers references further teaches the following:

"**plurality of data collectors disposed at the facility, the plurality of data collectors operable to automatically transmit energy consumption data to the processor, the energy consumption data associated with an energy consumption system of the facility**" (See Ehlers: col. 9, lines 25-32 where multiple input devices is supported, collected data is normalized in pulse count to units of energy consumed, and then passed to one function for short term storage, and the data considered of historical importance is stored in another function for long term storage is equivalent to Applicant's **plurality of data collectors disposed at the facility, the plurality of data collectors operable to automatically transmit energy consumption data to the**

processor, the energy consumption data associated with an energy consumption system of the facility);

"**the analysis engine further operable to analyze the pre-determined event based on the energy consumption data values**" (See Amaratunga: Page 7, [0048] where data is collected and stored to build a historic database, the current set of data, and a new regression is performed on the latest set of data in which data is collected periodically or when a significant change of energy-consumption system is equivalent to Applicant's **the analysis engine further operable to analyze the pre-determined event based on the energy consumption data values**); and

"**each of the data collectors further operable to store a history of energy consumption data values for a predetermined time period and to**", (See Ehlers: Fig. 4, elements 21 and 22 where historical data storage is coupled with data collection and storage functions and col. 5, lines 11-14 by using historical data of energy consumption to compute energy consumption of one load).

The combined teaching of Ehlers and Amaratunga references does not explicitly teach "to **transmit a predetermined quantity of the energy consumption data values occurrence prior to and after a predetermined event to the processor after the occurrence of the predetermined event**".

However, Urbano teaches "to **transmit a predetermined quantity of the energy consumption data values occurrence prior to and after a predetermined event to the processor after the occurrence of the predetermined event**" (See Abstract, Fig. 13 and col. 1, lines 36-62 where data collection rate of an image acquisition device is

adjusted in inverse proportion to the most recent frame correlation coefficient and the device process is triggered by the data collected to locate a predetermined event and the teaching shows the device responds to predetermined event and adjust data collection to a predetermined setting, the correlation coefficient).

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to combine the teaching of Urbano with Ehlers and Amaratunga references by implementing variable data collection rate to Ehlers and Amaratunga's systems because adjusting data collection rate would have enhanced the object every reference pursuits: **saving cost**.

As per Claim 38, Amaratunga teaches the following:

"**A system for remote monitoring and controlling of energy consumption of a facility, comprising: a processor**" (See Fig. 1, element 20 and Page 4, [0030], lines 16-20 where the processing module of the energy consumption prediction system comprises a processor is equivalent to Applicant's **A system for remote monitoring and controlling of energy consumption of a facility, comprising: a processor**);

"**a database coupled to the processor, the database operable to receive and store energy consumption data associated with the facility**" (See Page 7, [0048], lines 1-4 where a historical database is the to collect and store data from meters, devices and sensors at the energy consumption systems or consumption site is equivalent to Applicant's **a database coupled to the processor, the database operable to receive and store energy consumption data associated with the facility**);

"**an analysis engine executable by the processor, the analysis engine operable to evaluate the energy consumption data**" (See Page 4, [0029], lines 1-4 where a TEUP (Total Energy Use Profile) is developed for analyzing and evaluating the energy amounts and providing other energy use information is equivalent to Applicant's **an analysis engine executable by the processor, the analysis engine operable to evaluate the energy consumption data)**, and "**determine whether energy consumption operating parameters require modification to increase efficiency**" (See Page 5, [0037], lines 13-20 where amount of energy to produce pollution is utilized to predict if energy consumption system is operating efficiently and at Page 7, [0047], lines 24-28 where a feedback control capability is built for attempting to bring the energy consumption system to a more efficient operating state is equivalent to Applicant's **determine whether energy consumption operating parameters require modification to increase efficiency);**

"**a control engine operable to initiate operating parameter modification of an energy consumption system of the facility in response to a desired operating parameter modification**" (See Page 7, [0047], lines 24-28 where a feedback control capability is built for attempting to bring the energy consumption system to a more efficient operating state is equivalent to Applicant's **a control engine operable to initiate operating parameter modification of an energy consumption system of the facility in response to a desired operating parameter modification)**.

Amaratunga does not explicitly teach control or other engines "**residing in the memory and executable by the processor**" or "**a memory unit coupled to the processor**".

However, Ehlers teaches a control engine "**residing in the memory and executable by the processor**" and "**a memory unit coupled to the processor**" (See Fig. 1, elements 20-30 and col. 7, lines 1-3 and 16-17 where a memory unit coupled to the processor, an energy management system includes processor and memory next to each other, and data stored in the memory is accessed and processed by the processor is equivalent to Applicant's control engine **residing in the memory and executable by the processor** and "**a memory unit coupled to the processor)**.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to combine Ehlers' reference into Amaratunga's by implementing the functions which require processing on the part of the processor, such as environmental condition control, price and energy consumption control, on the memory unit such that they can be processed without invoking disk i/o and memory loading/swapping because by doing so the processing system would have performed more efficiently.

The combined teaching of Ehlers and Amaratunga references does not explicitly teach "**the control engine further operable to modify a variable rate of energy consumption data collection at the facility in response to a predetermined event**".

However, Urbano teaches "**the control engine further operable to modify a variable rate of energy consumption data collection at the facility in response to a**

predetermined event" (See Abstract, Fig. 13 and col. 1, lines 36-62 where data collection rate of an image acquisition device is adjusted in inverse proportion to the most recent frame correlation coefficient and the device process is triggered by the data collected to locate a predetermined event and the teaching shows the device responds to predetermined event and adjust data collection to a predetermined setting, the correlation coefficient).

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to combine the teaching of Urbano with Ehlers and Amaratunga references by implementing variable data collection rate to Ehlers and Amaratunga's systems because adjusting data collection rate would have enhanced the object every reference pursuits: **saving cost**.

The combined teaching of Urbano, Amaratunga and Ehlers references further teaches the following:

"**the analysis engine further operable to analyze the predetermined event based on a first subset of the energy consumption data obtained before the predetermined event and a second subset of the energy consumption data obtained after the predetermined event**" (See Amaratunga: Page 7, [0048] where data is collected and stored to build a historic database, the current set of data, and a new regression is performed on the latest set of data in which data is collected periodically or when a significant change of energy-consumption system is equivalent to Applicant's **the analysis engine further operable to analyze the predetermined event based on a first subset of the energy consumption data obtained before the**

predetermined event and a second subset of the energy consumption data obtained after the predetermined event) and

"**a validation engine residing in the memory and executable by the processor, the validation engine operable to validate the energy consumption data**" (See Amaratunga: Page 4, [0030] and Page 5, [0037], lines 8-20 by collecting, evaluating and analyzing data and determining if the energy consumption system is operating efficiently and energy consumption amount is consistent with what benchmarked, and Ehlers: Fig. 1, elements 20-30 and col. 7, lines 1-3 and 16-17 where a memory unit is coupled to the processor, an energy management system includes processor and memory next to each other, and data stored in the memory is accessed and processed by the processor is equivalent to Applicant's **a validation engine residing in the memory and executable by the processor, the validation engine operable to validate the energy consumption data**).

As per claim 41, Amaratunga teaches the following:

"**remote monitoring and controlling of energy consumption of a facility**" (See Fig. 1, element 20 and Page 4, [0030], lines 16-20 where the processing module of the energy consumption prediction system comprises a processor is equivalent to Applicant's **remote monitoring and controlling of energy consumption of a facility**); and

"**receiving, from a data collector disposed at the facility, energy consumption data associated with the facility**" at a data processing module **"disposed remotely from**

the facility" (See Fig. 1, element 20 and Page 4, [0030], lines 16-20 where meter-generated information is collected and transmitted to data processing module over communication link is equivalent to Applicant's **receiving, from a data collector disposed at the facility, energy consumption data associated with the facility** at a data processing module **disposed remotely from the facility**).

Amaratunga does not explicitly teach that the data processing module is a processor.

However, Ehlers teaches a control engine "**residing in the memory and executable by the processor**" and "**a memory unit coupled to the processor**" (See Fig. 1, elements 20-30 and col. 7, lines 1-3 and 16-17 where a memory unit coupled to the processor, an energy management system includes processor and memory next to each other, and data stored in the memory is accessed and processed by the processor is equivalent to Applicant's control engine **residing in the memory and executable by the processor** and "**a memory unit coupled to the processor)**.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to combine Ehlers' reference into Amaratunga's by implementing multiple data collection and storage functions for providing short and long term data storage separately, and where the functions require processing on the part of the processor, such as environmental condition control, price and energy consumption control, on the memory unit such that they can be processed without invoking disk i/o and memory loading/swapping because by doing so the processing system would have performed more efficiently.

The combined teaching of the Amaratunga and Ehlers references further teaches the following:

"**receiving environmental data associated with the facility**" (See Amaratunga: Page 4, [0029] where TEUP receives and stores the environmental data is equivalent to Applicant's **receiving environmental data associated with the facility**);

"**determining whether an operating parameter of an energy consumption system of the facility requires modification to increase efficiency using the energy consumption data and the environmental data**" (See Amaratunga: Page 5, [0037], lines 13-20 where amount of energy to produce pollution is utilized to predict if energy consumption system is operating efficiently and at Page 7, [0047], lines 24-28 where a feedback control capability is built for attempting to bring the energy consumption system to a more efficient operating state is equivalent to Applicant's **determining whether an operating parameter of an energy consumption system of the facility requires modification to increase efficiency using the energy consumption data and the environmental data**); and

"**automatically modifying the operating parameter of the energy consumption system corresponding to the required modification**" (See Amaratunga: Page 7, [0047], lines 24-28 where a feedback control capability is built for attempting to bring the energy consumption system to a more efficient operating state is equivalent to Applicant's **automatically modifying the operating parameter of the energy consumption system corresponding to the required modification**).

The combined teaching of Ehlers and Amaratunga references does not explicitly teach "**automatically modifying a variable rate of energy data collection at the facility in response to a predetermined event**".

However, Urbano teaches "**automatically modifying a variable rate of energy data collection at the facility in response to a predetermined event**" (See Abstract, Fig. 13 and col. 1, lines 36-62 where data collection rate of an image acquisition device is adjusted in inverse proportion to the most recent frame correlation coefficient and the device process is triggered by the data collected to locate a predetermined event and the teaching shows the device responds to predetermined event and adjust data collection to a predetermined setting, the correlation coefficient).

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to combine the teaching of Urbano with Ehlers and Amaratunga references by implementing variable data collection rate to Ehlers and Amaratunga's systems because adjusting data collection rate would have enhanced the object every reference pursuits: **saving cost**.

The combined teaching of Urbano, Ehlers and Amaratunga references further teaches the following:

"**automatically analyzing the predetermined event based on a first subset of the energy consumption data obtained before the predetermined event and a second subset of the energy consumption data obtained after the predetermined event**" (See Amaratunga: Page 7, [0048] where data is collected and stored to build a historic database, the current set of data, and a new regression is performed on the latest set of

data in which data is collected periodically or when a significant change of energy-consumption system is equivalent to Applicant's **automatically analyzing the predetermined event based on a first subset of the energy consumption data obtained before the predetermined event and a second subset of the energy consumption data obtained after the predetermined event**); and "**validating the energy consumption data**" (See Amaratunga: Page 4, [0030] and Page 5, [0037], lines 8-20 by collecting, evaluating and analyzing data and determining if the energy consumption system is operating efficiently and energy consumption amount is consistent with what benchmarked, and Ehlers: Fig. 1, elements 20-30 and col. 7, lines 1-3 and 16-17 where a memory unit is coupled to the processor, an energy management system includes processor and memory next to each other, and data stored in the memory is accessed and processed by the processor is equivalent to Applicant's is equivalent to Applicant's **validating the energy consumption data**).

As per claims 2, 16 and 29, the Amaratunga reference further teaches "**the database receives the energy consumption data via an Internet communications network**" (See Fig. 1, elements, 20 and 31s, and Page 4, [0027], lines 25-26 where the communication link, including internet, connects to the processing and at Page 7, [0048], lines 1-4 where the database is built up by the processing module is equivalent to Applicant's **the database receives the energy consumption data via an Internet communications network)**.

As per claims 3 and 17, the Amaratunga reference further teaches "**the database receive the energy consumption data from a data collector disposed at the facility**" (See Fig. 1, elements 29 and 100, and Page 4, [0027] where data collection unit is located inside of the energy consumption site is equivalent to Applicant's **the database receive the energy consumption data from a data collector disposed at the facility)**.

As per claims 4 and 36, the Amaratunga reference further teaches "**database further receives and stores environmental data**" (See Page 4, [0029] where TEUP receives and stores the environmental data is equivalent to Applicant's **database further receives and stores environmental data)**, and "**wherein the analysis engine is further operable to determine whether operating parameter modification is required using the environmental data**" (See Page 7, [0047] where identifying the likely cause for the variance in energy consumption and comparing variables with data from the historical database is equivalent to Applicant's **wherein the analysis engine is further operable to determine whether operating parameter modification is required using the environmental data)**.

As per claim 5, the Amaratunga reference further teaches "**the environmental data comprises environmental forecast information, and wherein the analysis engine is operable to determine whether operating parameter modification is required for the energy consumption system using the environmental forecast information**"

(See Page 6, [0042] at Page 7, [0047], lines 24-28 where the energy consumption prediction system utilizes factors such as nature of the energy, energy-provider controlling factors, energy consumption site particulars, details of energy consumption system, and manufacturing or operating process variables, and a feedback control capability is built for attempting to bring the energy consumption system to a more efficient operating state is equivalent to Applicant's **the environmental data comprises environmental forecast information, and wherein the analysis engine is operable to determine whether operating parameter modification is required for the energy consumption system using the environmental forecast information)**.

As per claims 6 and 19, the Ehlers reference further teaches "**a reporting engine residing in the memory and executable by the processor, the reporting engine operable to generate an energy consumption report based on the energy consumption data**" (See col. 3, lines 31-37 and Fig. 1, elements 20-30 and col. 7, lines 1-3 and 16-17 where an energy consumption management system having capability of reporting detailed energy consumption data as a function of time and a memory unit coupled to the processor at where an energy management system includes processor and memory next to each other, and data stored in the memory is accessed and processed by the processor is equivalent to Applicant's **a reporting engine residing in the memory and executable by the processor, the reporting engine operable to generate an energy consumption report based on the energy consumption data)**.

As per claims 7 and 20, the combined teaching of the Amaratunga and Ehlers references further teaches "**a validation engine residing in the memory and executable by the processor, the validation engine operable to validate the energy consumption data**" (See Amaratunga: Page 5, [0037], lines 8-20 by determining if the energy consumption system is operating efficiently and energy consumption amount is consistent with what benchmarked, and Ehlers: Fig. 1, elements 20-30 and col. 7, lines 1-3 and 16-17 where a memory unit is coupled to the processor, an energy management system includes processor and memory next to each other, and data stored in the memory is accessed and processed by the processor is equivalent to Applicant's **a validation engine residing in the memory and executable by the processor, the validation engine operable to validate the energy consumption data**).

As per claim 8, the Amaratunga reference further teaches "**the validation engine is operable to validate the energy consumption data using environmental data**" (See Page 6, [0042] where the energy consumption prediction system identifies the likely cause of energy consumption variance by utilizing factors such as nature of the energy, energy-provider controlling factors, energy consumption site particulars, details of energy consumption system, and manufacturing or operating process variables is equivalent to Applicant's **the validation engine is operable to validate the energy consumption data using environmental data**.

As per claim 9, the Amaratunga reference further teaches "**the validation engine is operable to validate the energy consumption data using historical energy consumption data associated with the facility**" (See Page 5, [0039], lines 1-2 where data processing module links energy provider database to evaluate the total energy use profile and (See Page 7, [0047], lines 24-28 by building up historical database is equivalent to Applicant's **the validation engine is operable to validate the energy consumption data using historical energy consumption data associated with the facility**).

As per claim 12, the combined teaching of the Amaratunga and Ehlers references further teaches "**comprising a plurality of data collectors disposed at the facility and operable to acquire energy consumption information associated with the facility**" (See Amaratunga: Fig. 1, elements 140s, 142s, 150s and 152s, and Page 3, [0026], lines 1-2 where the elements are for monitoring, measuring and recording the energy consumption amounts is equivalent to Applicant's **comprising a plurality of data collectors disposed at the facility and operable to acquire energy consumption information associated with the facility)**.

As per claims 13, 26 and 30, the combined teaching of the Amaratunga and Ehlers references further teaches "**data collectors are coupled together, and wherein one of the data collectors is operable to transmit the respective acquired energy consumption information to another data collector**" (See Ehlers: Fig. 4, elements

21-22 and col. 8, lines 29-36 where data collection storage functions connected to each other and multiplexed to data collection units is equivalent to Applicant's **data collectors are coupled together, and wherein one of the data collectors is operable to transmit the respective acquired energy consumption information to another data collector)**.

As per claim 14, the Ehlers reference further teaches "**the one data collector is operable to transmit the respective acquired energy consumption information in response to a predetermined event**" (See col. 9, lines 58-63 where data are provided to data collection function at regular interval is equivalent to Applicant's **the one data collector is operable to transmit the respective acquired energy consumption information in response to a predetermined event**).

As per claim 18, the Amaratunga reference further teaches "**receiving the environmental data comprises receiving environmental forecast information, and wherein determining comprises determining whether the operating parameter of the energy consumption system of the facility requires modification using the environmental forecast information**" (See Page 6, [0042] where the energy consumption prediction system utilizes factors such as energy consumption site particulars is equivalent to Applicant's **receiving the environmental data comprises receiving environmental forecast information, and wherein determining comprises determining whether the operating parameter of the energy**

consumption system of the facility requires modification using the environmental forecast information, and "**wherein the analysis engine is further operable to determine whether operating parameter modification is required using the environmental data**" (See Page 7, [0047] by identifying the likely cause for the variance in energy consumption and comparing variables with data from the historical is equivalent to Applicant's **wherein the analysis engine is further operable to determine whether operating parameter modification is required using the environmental data**).

As per claims 21, 40 and 42, the Amaratunga reference further teaches "**wherein validating comprises comparing the energy consumption data to historical energy consumption information**" (See Page 7, [0047] by identifying the likely cause for the variance in energy consumption and comparing variables with data from the historical database is equivalent to Applicant's **wherein validating comprises comparing the energy consumption data to historical energy consumption information).**

As per claims 22 and 43, the Amaratunga reference further teaches "**determining whether a value of the energy consumption data remains substantially constant for a predetermined time period and validating the energy consumption data if the value remains substantially constant for the predetermined time period**" (See Page 7, [0047] by identifying the likely cause for the variance in energy consumption

and comparing variables with data from the historical database is equivalent to Applicant's **determining whether a value of the energy consumption data remains substantially constant for a predetermined time period and validating the energy consumption data if the value remains substantially constant for the predetermined time period)**.

As per claims 23 and 44, the Amaratunga reference further teaches "**determining whether a value of the energy consumption data exceeds a pre-determined range for the energy consumption data; and validating the energy consumption data if the value exceeds the predetermined range**" (See Page 7, [0047] by identifying the likely cause for the variance in energy consumption and comparing variables with data from the historical database is equivalent to Applicant's **determining whether a value of the energy consumption data exceeds a pre-determined range for the energy consumption data; and validating the energy** consumption data if the value exceeds the predetermined range).

As per claims 27 and 45, the combined teaching of the Amaratunga and Ehlers references further teaches the following:
"**determining whether a predetermined event occurs associated with energy consumption data loss**" (See Amaratunga: Page 7, [0047] by identifying the likely cause for the variance in energy consumption and comparing variables with data from

the historical database is equivalent to Applicant's **determining whether a predetermined event occurs associated with energy consumption data loss**); and "**automatically transmitting energy consumption-information acquired by one of the data collectors to another data collector in response to the occurrence of the pre-determined event**" (See Ehlers: col. 9, lines 58-63 and col. 9, lines 25-32 where data collector is operable to transmit the respective acquired energy consumption information in response to a predetermined event" at col. 9, lines 58-63 and col. 9, lines 25-32 where data is provided to data collection function at regular interval, multiple input devices are supported, the collected data is normalized in pulse count to units of energy consumed. and then passed to one function for short term storage and data considered of historical importance can be stored in another function for long term storage is equivalent to Applicant's **automatically transmitting energy consumption-information acquired by one of the data collectors to another data collector in response to the occurrence of the pre-determined event**).

As per claim 31, the Amaratunga reference further teaches the following: "**the control engine further operable to initiate a modification to a variable rate of data collection by the data collectors**" (See Page 4, [0028] and Page 7, [0048] where data processing module accesses data storage at a predetermined frequency or when energy-consumption system is significantly changed, a new regression is performed to update the transfer function is equivalent to Applicant's **the control engine further**

operable to initiate a modification to a variable rate of data collection by the data collectors)

As per claim 34, the Ehlers reference further teaches "**each of the data collectors is operable to determine an average energy consumption data value for a predetermined time interval and transmit the average energy consumption data value to the processor if the predetermined event does not occur**" (See col. 5, lines 11-14 by using historical data of energy consumption to compute energy consumption of, at least one load is equivalent to Applicant's **each of the data collectors is operable to determine an average energy consumption data value for a predetermined time interval and transmit the average energy consumption data value to the processor if the predetermined event does not occur**).

As per claim 35, the Ehlers reference further teaches "**each of the data collectors is operable to transfer the respective energy consumption data to another data collector upon the occurrence of a predetermined event**" (See Fig. 4, elements 21 and 22 where historical data storage is coupled with data collection and storage functions is equivalent to Applicant's **each of the data collectors is operable to transfer the respective energy consumption data to another data collector upon the occurrence of a predetermined event**).

As per claim 37, the combined teaching of the Amaratunga and Ehlers references further teaches "**a control engine executable by the processor, the control engine operable to initiate the operating parameter modification of the energy consumption system**" (See Amaratunga: Page 7, [0047], lines 24-28 where a feedback control capability is built for attempting to bring the energy consumption system to a more efficient operating state is equivalent to Applicant's **a control engine executable by the processor, the control engine operable to initiate the operating parameter modification of the energy consumption system),** and the control engine "**residing in the memory and executable by the processor**" and "**a memory unit coupled to the processor**" (See Ehlers: Fig. 1, elements 20-30 and col. 7, lines 1-3 and 16-17 where a memory unit coupled to the processor and an energy management system includes processor and memory next to each other, and data stored in the memory is accessed and processed by the processor is equivalent to Applicant's the control engine **residing in the memory and executable by the processor** and **a memory unit coupled to the processor)**.

As per claim 39, the combined teaching of the Amaratunga and Ehlers references further teaches "**the validation engine is operable to validate the energy consumption data using environmental data**" (See Amaratunga: Page 4, [0029]-[0030] and Page 5, [0037], lines 8-20 where TEUP receives and stores the environmental data and data processing modules collect, evaluate and analyze data and determine if the energy consumption system is operating efficiently and energy

consumption amount is consistent with what benchmarked, and Ehlers: Fig. 1, elements 20-30 and col. 7, lines 1-3 and 16-17 where a memory unit is coupled to the processor, an energy management system includes processor and memory next to each other, and data stored in the memory is accessed and processed by the processor is equivalent to Applicant's **the validation engine is operable to validate the energy consumption data using environmental data**).

Conclusions

3. The prior art made of record

A. U.S. Publication 2003/0061091

B. U.S. Patent 6,216,956

D. U.S. Patent 6,056,691

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

C. U.S. Patent 5,651,264

E. U.S. Patent 4,319,327

U. Data Mining to Improve Energy Efficiency in Buildings, September 2001 (web site of knowledgeprocesssoftware.com/newweb/CounterDet).

Contact Information

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuen S Lu whose telephone number is (571) 272-4114. The examiner can normally be reached on Monday-Friday (8:00 am-5:00 pm). If attempts to reach the examiner by telephone pre unsuccessful, the examiner's

Supervisor, John Cottingham can be reached on (571) 272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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